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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JIRO HIRAIWA, OSAMU YOSHIMOTO, and
TETSURO TOJO

Appeal 2010-004582
Application 10/661,638
Technology Center 1700

Before BRADLEY R. GARRIS, CATHERINE Q. TIMM, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a rejection of claims 1-8, 10, and 12 under 35 U.S.C. § 103(a) as unpatentable over Tojo (WO 01/77412, pub. Oct. 18, 2001)¹ in view of Marumo (US 4,790,859; issued Dec. 13, 1988), and further in view of Fumio (JP2000-160390-A; pub. Jun. 13, 2000)². We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

The claims are directed to a fluorine gas generator. Claim 1, reproduced below, is illustrative of the claimed subject matter:

Claim 1. A fluorine gas generator comprising:

a box-shaped body containing an electrolyzer for fluorine gas generation, said box-shaped body being partitioned into at least three compartments separated from each other by internal partition walls such that gases in the at least three compartments do not mix together, including:

a first compartment containing said electrolyzer;

a second compartment containing a first adsorption unit that adsorbs hydrogen fluoride from fluorine gas discharged from an anode chamber of the electrolyzer; and

a third compartment containing a second adsorption unit that adsorbs hydrogen fluoride from hydrogen gas discharged from a cathode chamber of the electrolyzer,

¹ The Examiner relies upon and cites to the corresponding U.S. equivalent Patent (US 6,818,105 B2; issued Nov. 16, 2004) without objection by Appellants, therefore, we also rely upon and cite to the U.S. equivalent patent.

² The Examiner relies upon and cites to a machine translation without objection by Appellants. We, therefore, also rely upon and cite to the machine translation.

wherein said second compartment and said third compartment are respectively provided directly adjacent to said first compartment, and said first compartment is located between said second compartment and said third compartment so that said second compartment and said third compartment are not in contact with each other.

DISCUSSION

All of the claims on appeal require a first compartment containing a fluorine gas generating electrolyzer, a second compartment containing a first absorption unit, and a third compartment containing a second absorption unit. The compartments are arranged in a specific configuration, namely, “said second compartment and said third compartment are respectively provided directly adjacent to said first compartment, and said first compartment is located between said second compartment and said third compartment so that said second compartment and said third compartment are not in contact with each other.” (Claim 1.)

Tojo is directed to a fluorine gas generator including an electrolytic cell and absorption units, but, as acknowledged by the Examiner, Tojo does not place these devices in separate compartments (Ans. 3).

Fumio (JP’390) is directed to an electrolytic plating apparatus for plating metal onto a substrate such as a semiconductor wafer (Fumio, ¶ [0001]). The apparatus includes a plating part 1 and a control part 2 (Fumio, ¶ [0002]). The plating tank is contained in plating part 1 (Fumio, ¶¶ [0002] and [0024-25]; Fig. 1). Control part 2 contains replenishment tanks 2-2 and 2-3 (Fumio, ¶¶ [0002] and [0026]). If the plating is performed in a clean room, there is a problem of contamination when maintenance is performed on the replenishment tanks (¶ [0007]). Fumio solves the contamination

problem by placing the control part 2 in a separate room from the plating part 1 (Fumio, ¶ [0029]).

In another embodiment of Fumio, the separate room arrangement also separates O₂ gases generated near the positive electrode of the plating tank from H₂ gases generated near an adjustment tank of the control part 2 (Fumio, ¶¶ [0018] and [0045]).

For the well supported reasons advanced by Appellants in the Brief and Reply Brief, we agree with Appellants that the evidence fails to support the Examiner's conclusion of obviousness. While Fumio suggests separating electrolytic plating baths from other devices in the system, Fumio places all the separated components into one separate room and does not suggest the specific arrangement of devices in three compartments as required by the claim. As well stated by Appellants:

The main error in the rejection as discussed further below is that the rejection appears based on a position that a broad disclosure of separating components into separate compartments to avoid cross-contamination would have led [one of ordinary skill in the art] to realize the claimed invention. The claims do not, however, broadly recite a concept of separating components into separate compartments, but instead the claim[s] recite a structure of three specific compartments arranged in a specific way, and specific components [are] included in those three compartments. In the claims the first compartment includes an electrolyzer. The second compartment includes a first absorption unit that absorbs hydrogen fluoride gas from fluorine gas discharged from an anode chamber of the electrolyzer. The third compartment includes a second absorption unit that absorbs hydrogen fluoride from hydrogen gas discharged from a cathode chamber of the electrolyzer. The claims also specifically recite the first compartment is between the second and third compartments.

All of the above-noted limitations are not arbitrary limitations based on a broad concept of separating components to avoid cross-contamination, but instead set forth specific components being separated in specific compartments and the compartments being organized in a specific way.

(Reply Br. 2.)

“Obviousness is a legal conclusion which we are required to draw from facts appearing in the record or of which judicial notice may be taken.” *In re Sporck*, 301 F.2d 686, 690 (CCPA 1962). Speculation and hindsight appraisal of the prior art cannot be substituted for such factual data. *Id.* Here, the necessary factual data supporting the rejection is lacking.

CONCLUSION

We do not sustain the rejection of the Examiner.

DECISION

The decision of the Examiner is reversed.

REVERSED

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